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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,585	09/27/2004	Charles Gary Kay	028647-000023	5584
24239	7590	06/05/2007		
MOORE & VAN ALLEN PLLC P.O. BOX 13706 Research Triangle Park, NC 27709			EXAMINER LARKIN, DANIEL SEAN	
			ART UNIT 2856	PAPER NUMBER
			MAIL DATE 06/05/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/711,585	Applicant(s) KAY, CHARLES GARY	
	Examiner Daniel S. Larkin	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 4,6,7,16-25 and 42-49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-3,5,8-15 and 26-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings were received on 23 January 2007. These drawings are acceptable.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5, 8, 12-14, 32, 35, 37, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 93/06910 (Burton).

With respect to the limitations of claim 1, Burton discloses an apparatus for sampling air contaminants, comprising: an air moving arrangement (14) disposed to be operable to move air over a sampling media/filters/denuders (22, 24, 26, 28), the air moving arrangement having an adjustable operating speed, page 4, lines 32-37 through page 5, lines 11-14; an integrated flow control means (16) in fluid communication with the air moving arrangement, see Figure 2, the flow control means utilizes a pressure transducer, which acts to determine the volume of flow based on the pressure in the housing; and a control system interfaced to the air moving arrangement (14), the control system operable to control the flow rate to a specific flow rate based at least in part on

signaling from the integrated airflow/pressure sensor, which in turn adjusts the power to the air moving arrangement, page 5, lines 11-14.

With respect to the limitation of claim 2, Burton discloses that the air moving arrangement (14) is controlled so as to maintain the sampling airflow at a constant flow rate, i.e. a target value, in order to allow the denuder to work properly, Thus, since the flow rate is being monitored and adjusted, some form of feedback appears to be present within the flow controller (16).

With respect to the limitation of claim 3, Burton discloses that the electronic flow controller (16) receives signaling and adjusts an operating speed of the air moving arrangement (14) based at least in part on the signaling, page 5, lines 11-14.

With respect to the limitation of claim 5, the electronic flow control used by Burton and described in US 5,006,227 teach the voltage of the pressure transducer indicative of the volume of flow is used as a means of measure, col. 3, lines 5-15, 32-34, and 42-49.

With respect to the limitations of claim 8, the electronic flow control used by Burton and described in US 5,006,227 teach the use of a temperature sensor, such as a thermistor (60), which is used to adjust the airflow determination, col. 3, lines 52-62.

With respect to the limitations of claims 12-14, Burton discloses that the sampling media/filters/denuders (22, 24,26, 28) are disposed to be in fluid communication with the airflow sensor and the air moving arrangement (14).

With respect to the limitations of claim 32, Burton disclose a method for sampling

air contaminants, comprising the steps of: calculating a measured airflow based at least in part, on at least one of a signal from an integrated pressure transducer, which acts to determine the volume of flow based on the pressure in the housing, as well as a current environmental reading, such as a temperature reading; comparing the measured airflow to a specific/target value to obtain a result; and adjusting the operating speed of the of the air moving arrangement along with other actions to maintain the measured airflow substantially in accordance with the target value, i.e. a constant flow rate, page 4, lines 32-37 through page 5, lines 11-14.

With respect to the limitations of claim 35, an electronic flow control used by Burton and described in US 5,006,227 teach the use of a temperature sensor, such as a thermistor (60), which is used to adjust the airflow determination, col. 3, lines 52-62.

With respect to the limitations of claim 37, Burton disclose an apparatus for sampling air contaminants, comprising the steps of: means for sensing the pressure within a housing as a representation of the total volumetric flow; means for calculating a measured airflow based at least in part, on at least one of a signal from an integrated pressure transducer, which acts to determine the volume of flow based on the pressure in the housing, as well as a current environmental reading, such as a temperature reading; means for comparing the measured airflow to a specific/target value to obtain a result; and means for adjusting the operating speed of the of the air moving arrangement along with other actions to maintain the measured airflow substantially in accordance with the target value, i.e. a constant flow rate, page 4, lines 32-37 through page 5, lines 11-14.

With respect to the limitations of claim 40, an electronic flow control used by Burton and described in US 5,006,227 teach the use of a temperature sensor, such as a thermistor (60), which is used to adjust the airflow determination, col. 3, lines 52-62.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9-11, 15, 26-31, 33, 34, 36, 38, 39, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/06910 (Burton) in view of US 3,603,155 (Morris et al.).

With respect to the limitations of claims 9, 10, 33, 34, 38, and 39, Burton discloses flow control means (16) to ensure that a sample is passed through the sampler at a steady and specific flow rate; however, Burton fails to expressly disclose a user display device for displaying the airflow or adjusting the target value based on user input.

Morris et al. disclose an apparatus for mass emission sampling of exhaust gases, comprising an air movement device/blower (16); a flow rate sensing means; and a control unit (45) associated with the flow rate sensing means in order display the flow rate, and initiate and maintain a target flow rate, Figure 1 and col. 6, lines 49-59. Modifying the system of Burton to provide a user display device would have been

obvious to one of ordinary skill in the art as a means of providing flow rate information to the user, as well as a means of correcting or changing the operation of the vacuum means in order to achieve the desired results of the operator of the sampling device.

With respect to the limitations of claims 11 and 36, Burton discloses that the electronic flow control as described in US 5,006,227 teach the use of a temperature sensor, such as a thermistor (60), which is used to adjust the airflow determination, col. 3, lines 52-62. Morris et al. also disclose the use of a temperature sensing means (53,54) connected to the control unit (45), and wherein the airflow is determined at least in part based on a temperature reading, col. 5, lines 49-58.

With respect to the limitations of claim 15, Burton discloses that the sampling media/filters/denuders (22, 24,26, 28) are disposed to be in fluid communication with the airflow sensor/pressure transducer and the airflow moving arrangement (14).

With respect to the limitations of claims 26, 28, and 30, Burton discloses compensating the measured flow rate for changes in temperature; however, Burton fails to expressly recite that standard airflow is determined from the measured airflow.

Morris et al. also disclose compensating the value of the measured flow rate for temperature. Additionally, Morris et al. also disclose that circuitry, as shown in Figure 4, provides a system for maintaining constant the "standard" mass flow rate selected by the operator, col. 7, lines 16-18. Measuring standard airflow would have been obvious to one of ordinary skill in the art given that it is common in the industry to express flow rate as standardized value. Measuring mass flow rate provides the additional benefit of

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not having to compensate the flow rate for external factors. Thus, the measured flow rate would be the standard flow rate.

With respect to the limitations of claims 27, 29, and 31, Burton fails to disclose providing a control system to store a history of sampling data.

Morris et al. appears to inherently have the capability to store a history of environmental and sample related data since the ambient air is sampled (29, 33) and collected (35) at various times as well as the exhaust contaminants are sampled and collected at various engines speeds and conditions as dictated by a dynamometer. Thus, the various results generated would be stored for a record of the test. Providing the sampler with computer storage means would have been obvious to one of ordinary skill in the art as a means of evaluating the environment the sampler is placed in to see, among other things, if the sampled environment is more or less contaminated than prior sampling periods.

With respect to the limitations of claim 41, Burton discloses compensating and changing the measured flow rate for changes in measured temperature; however, Burton fails to disclose that the sampler is operated for a plurality of sampling periods.

Morris et al. appear to suggest that the sampler is operated over a plurality of sampling periods, which result from the vehicle experiencing various engine speeds and loads; and means are provided for maintaining/updating the measured airflow at a constant mass airflow based on a change in the temperature, col. 2, lines 40-44. Modifying the controller to provide for a plurality of sampling periods would have been obvious to one of ordinary skill in the art as a means of evaluating the efficiency of the

sampler to collect samples as well as to determine how contaminated the sampling environment is based on the overloading of samples collected, which can affect the ability of the sampler to maintain a constant rate of flow.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 32, and 37 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

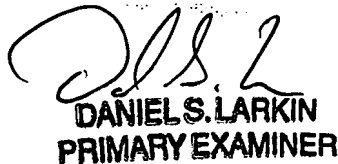
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Larkin
AU 2856
30 May 2007



DANIEL S. LARKIN
PRIMARY EXAMINER